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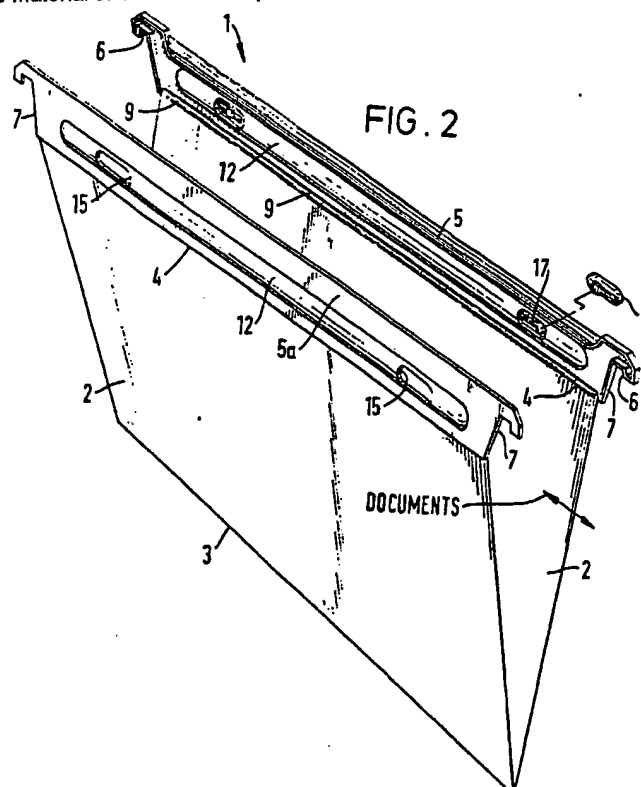
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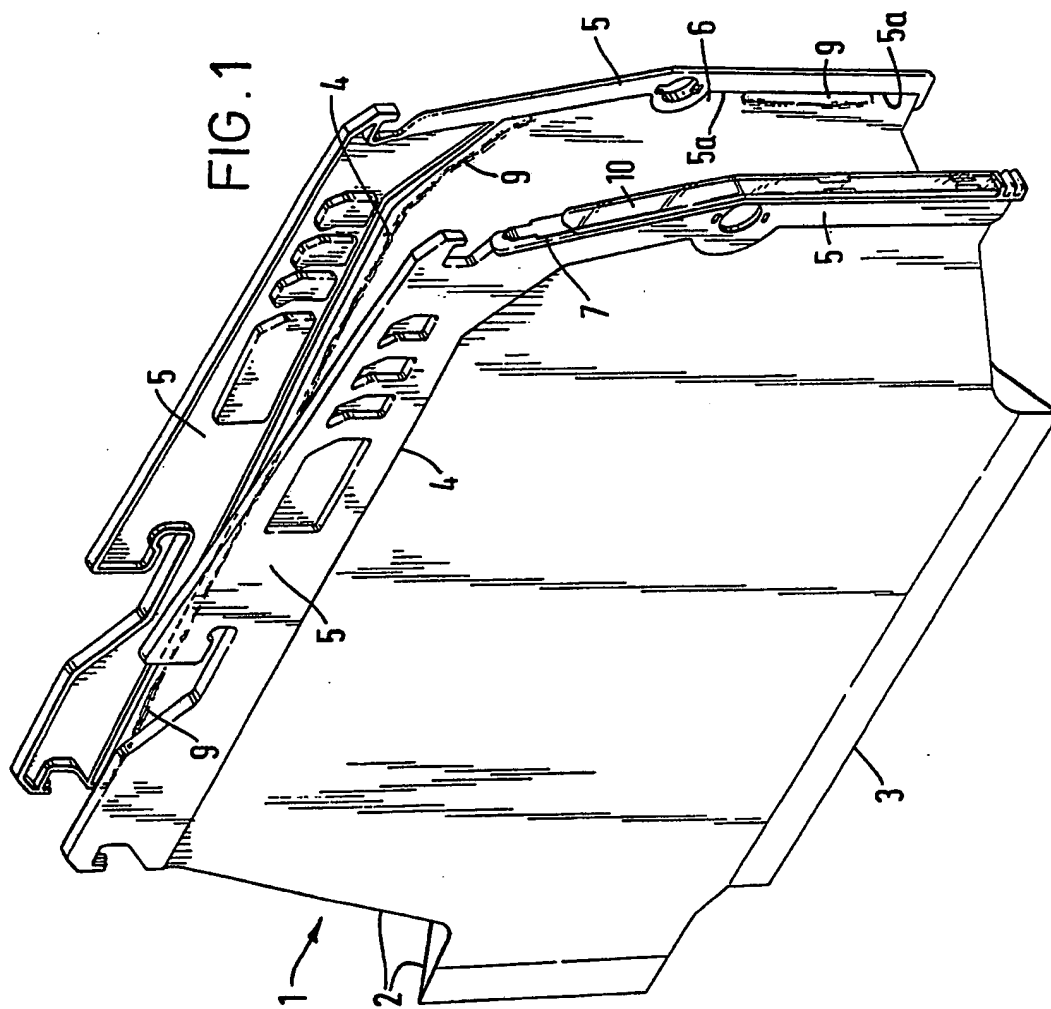
(54) **Document file**

(57) A suspension or lateral document file comprises a resiliently flexible file wallet (2) made of a first plastics material, upper and/or side edges of said wallet being secured by one or more welding connections (4) to supporting hangers (5) made of said first plastics material or of a weld-compatible second plastics material.

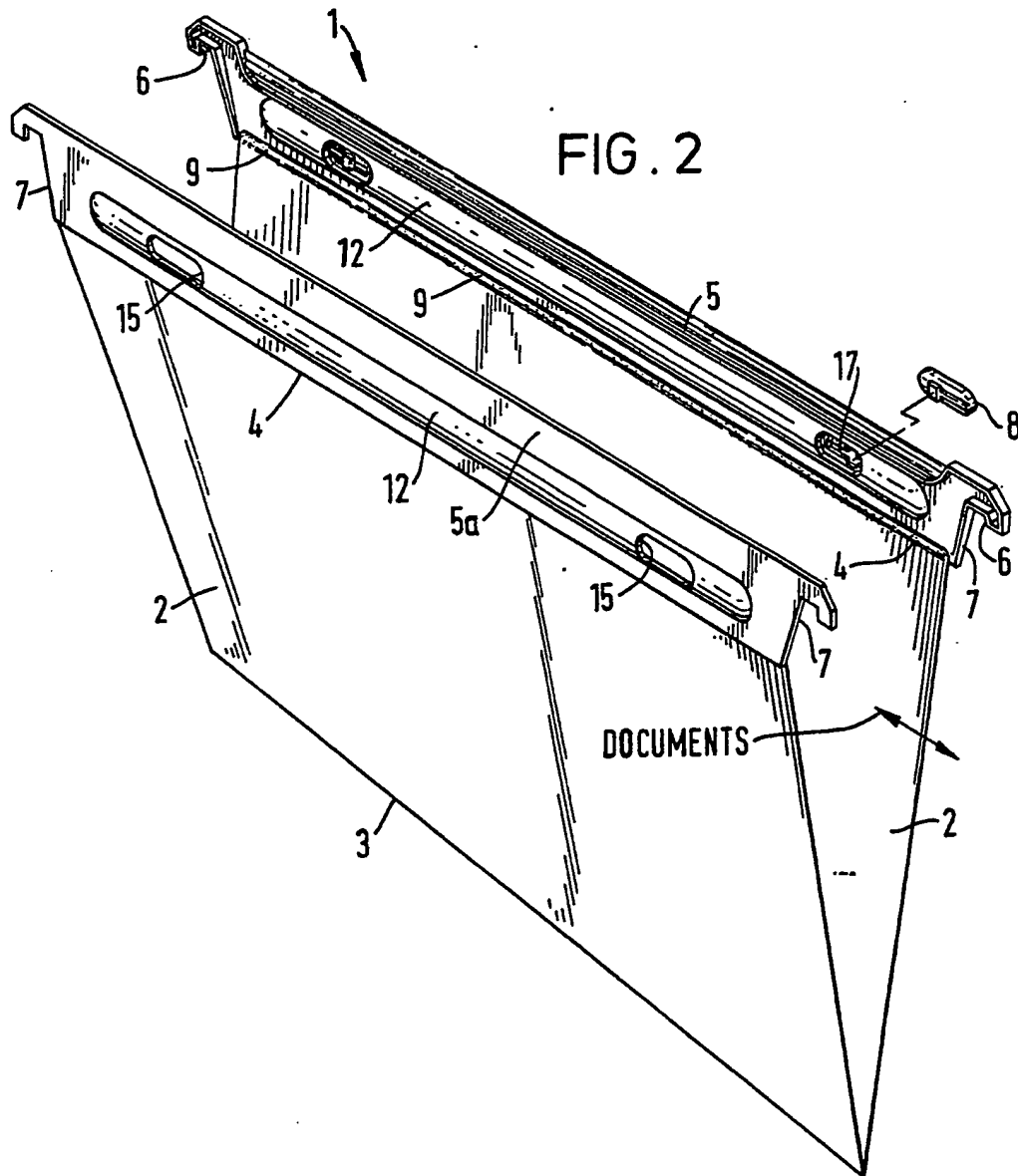


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FIG. 3

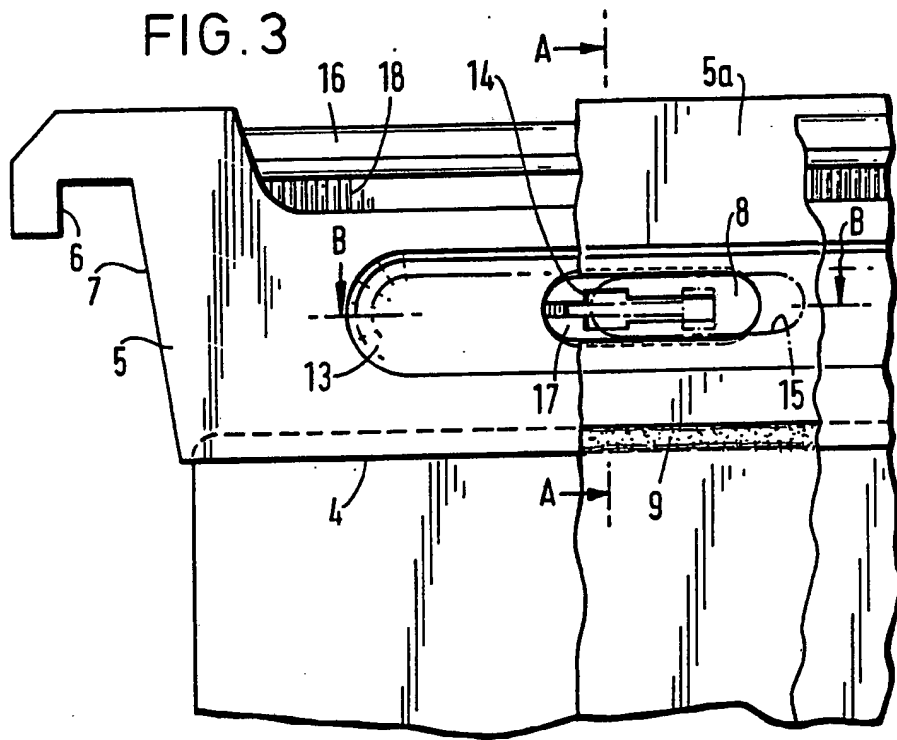


FIG. 4

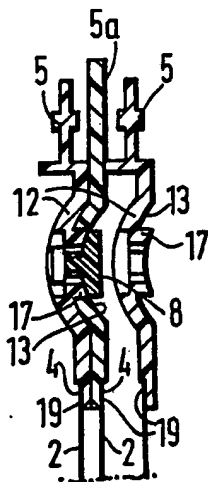
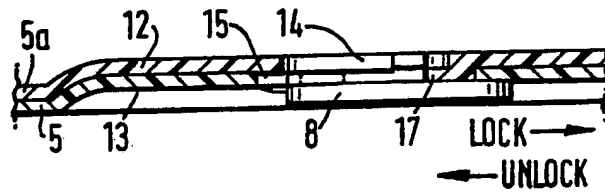


FIG. 5



TITLEImprovements in or relating to Document Files

This invention is concerned with an improved document file. Files suitable for storing documents are divided generally into lateral files and suspension files. The former generally have a side opening for retrieving and storing documents, the latter generally an uppermost opening for the same purpose.

One conventional suspension file comprises a file wallet of cardboard secured at its upper edges to a metal bar for supporting the file on e.g. two spaced apart metal rails. A plurality of suspension files can be stored side-by-side within filing systems such as drawers or cabinets.

Cardboard lateral and suspension files have a limited lifetime and in the long term are regarded as disposable items.

They may have certain disadvantages:

1. The joint between metal hanger and card can fail, especially if a heavy file is dropped into the wallet.
2. The metal hangers can be permanently distorted if subjected to dynamic load, i.e. a file being dropped into wallet.
3. The card wallet can tear along the crease lines.
4. The index holder-cover can easily be broken if a file drawer is closed with the file wallet standing proud, (typically - a very full drawer). The brittle moulding comes into contact with the cabinet carcass and snaps off the metal file hanger.
5. The metal hangers have sharp edges and prising a file out of a full drawer can be difficult.

6. It is easy to slip a file between two wallets, rather than into a wallet.
7. The hangers regularly jump off the carriers.
8. When file searching, the index is often used to move the files and as a consequence, they tend to break off.

We have now devised improved suspension and lateral document files which may have better long term wear resistance and other advantages over cardboard type files.

According to this invention there is provided a document file comprising a resiliently flexible file wallet made of a first plastics material, the upper edges of said wallet being secured by one or more welded connections to supporting hangers, which are made of said first plastics material or of a weld-compatible second plastics material, the hangers having hooks integrally formed therewith.

Whatever plastics materials are used for the wallet and hangers, the hanger is preferably thicker and more rigid than the wallet. The said first plastics material from which the file and/or hanger(s) may be constructed may be, for example an olefin or vinyl polymer such as polyethylene, polypropylene, or polyvinyl chloride. Alternatively the hanger(s) may be constructed from a second plastics material such as ABS (acrylonitrile-butadiene-styrene). Whichever plastics material is employed for the hangers it may comprise a filler additive. The filler employed may account for some 5/50% by weight of the polymer, preferably 10/45% by weight, and most preferably some 20/35% by weight. It is preferred to use a filler for hangers constructed from propylene polymers. Conveniently the filler material may comprise, e.g. talc or glass, the latter being

preferred and in the form of long strand glass fibres. Known reinforced plastics materials can be used. The glass fibre filler provides strength and resilience and may be coupled with other agents, e.g. flame-retardant additives.

The term "weld compatible" is used herein to mean capable of forming a welded connection. We have generally found that where file wallet and hangers are constructed from the same plastics material, although they may be of different thickness, density and have different fillers etc., they are nevertheless weld-compatible because a satisfactory heat weld can be made between the upper edges of the wallet and the hangers.

In order to determine whether two different plastics materials are weld-compatible it is only necessary to conduct a simple test. Simply try to join two sheets by ultrasound or heat welding. If successful, the first and second plastics materials are termed "weld-compatible".

For the file wallet it is preferred to use a cast polymer film of PVC or polypropylene filled or unfilled having a thickness of 0.1 to 1.5 mm. For the hanger it is preferred to use injected moulded polypropylene or plasticised polyvinylchloride.

The hanger(s) may be resiliently flexible but less flexible than the file wallet. Each hanger may be a one-piece moulding. The document file has integrally formed hooks for supporting the file in a filing system and may include means for displaying file content information, such as a slidable index carrier.

The most preferred document files utilise two moulded hangers

heat-welded by continuous or discontinuous weld to a plastic wallet.

Either polypropylene or PVC can be used for the hangers and wallet.

The mould hangers can have several important subsidiary features:-

a. The two non-identical hanger mouldings, front and back, may have a nesting profile such that the front hanger of one file and the back hanger of the adjacent one nest - thus saving space, improving appearance and further adding rigidity. The nesting profiles can be complementary elongate ribs.

b. In addition, in the above feature, nesting hangers can optionally be positively locked together by a file-to-file interlock such as a pair of sliding buttons, thus preventing papers from mis-filing between adjacent files. The interlock buttons can be located on one hanger and pass through holes in the other hanger.

If the interlock feature is required, the buttons are simply slid across, thus locking the hangers together. Whether or not the positive interlock is used, the hangers can still internest and there is no space penalty.

c. The end hook shape and depth of the hangers can substantially reduce the chances of the hangers becoming dislodged from the carriers.

c. The end hook profile also protects the vulnerable joint between the wallet and hanger. On card files, the card is often damaged when it contacts the metal carrier.

e. An index system can be included which consists of two mouldings - a carrier part for an index card is snapped on to the hanger and a translucent cover clips on to the carrier and protects the index card. The advantage is that a flexible moulding may be used for the carrier and is more impact-resistant than conventional clear plastic



mouldings. The carrier can be slid along the hanger and a click-stop arrangement can ensure positive positioning of the carrier. Use of a plastic carrier minimises wear and tear. A less wear-resistant plastic material may be used for the carrier part so that the said carrier part wears rather than the hanger. Thereby the index system would be replaced rather than the document file.

f. A one-piece combined carrier-cover is also possible, as an index system. Index strips in features e and f may be inserted easily when the document files are in-situ.

In order that the invention may be illustrated and readily carried into effect, reference is now made to the accompanying drawings illustrating embodiments of lateral and suspension files by way of example only and in which:

Figure 1 is an isometric view of partially opened lateral file,  
Figure 2 is an isometric view of partially opened suspension file,  
Figure 3 is a detailed enlargement of a hanger from Figure 2,  
Figure 4 is a section on A-A from Figure 3, and  
Figure 5 is a section on B-B from Figure 3.

Figure 1 shows a perspective view of a file and hanger(s) according to the invention, the file 1 comprises a pair of file covers 2, formed as one sheet but folded about the lower edge 3 whereby documents can be inserted at the side edge 6 as in a conventional lateral file.

The file covers in this embodiment were made from cast polypropylene film of 0.3 - 0.5 mm thickness. The cast film is blanked out to provide the flat pocket and a crease is formed about the base (lower edge 3).

The hangers 5 are separate injection mouldings and in this embodiment comprise a filled propylene polymer.

In forming different file covers propylene polymers were used but with varying quality and content of filler. Talc was used as one filler and the proportions varied whereby the talc filler comprised from 20-30% by weight. Other files were constructed in which the filler comprised glass in an amount of 20-30% by weight. The polymer materials used were commercially available reinforced polypropylene products.

One of the hangers 5 includes indexing means in the form of channel section 7 formed into the moulding and a cover part 10 therefor comprising a clear polystyrene moulding.

In the embodiment illustrated the file covers 2 are welded by heat weldings or ultrasound at their upper edges 4 and at side edges 5a to a part of the hanger 5. The weld line 9 may extend from one end of the hanger along the length of the file cover to the other end of the hanger. The welding of hanger(s) to file covers may be by one or more continuous and elongate weld lines.

Embodiments of the invention which employ a heat or ultrasound welded connection between file cover 2 and hanger 5 may require assembly at the manufacturing stage. It is preferred for convenience and ease of welding that the plastics material of which the covers and hangers are made comprise the same polymeric material, e.g. polypropylene file covers and polypropylene hangers whether or not the latter contain additives such as fillers. It is also possible to use ABS polymeric hangers, preferably welded to weld-compatible polypropylene file covers.

Referring to Figure 2 of the drawings the document file 1 comprises a flexible plastic wallet 2 which may be constructed of cast polypropylene. This may have a thickness of the order 0.3 - 0.6 mm. As shown, the file wallet is folded about its lower edge 3, the uppermost edges 4 of the wallet 2 being secured by a continuous elongate weld line 9 directly to the material of the rear hanger 5. The said rear hanger comprises a one-piece moulding of resiliently flexible plastics material with integrally formed hook formations 6 for attaching the document wallet to a suspension filing system. To facilitate insertion and removal of the document file the ends 7 of the rear and front hangers 5, 5a are set at an acute angle. The front hanger 5a is similarly welded to the wallet 2.

The view shows a raised platform 17 upon which a file-to-file interlock button 8 is slidably mounted.

Referring to Figures 3 to 5, the raised platforms 17 are located upon a recess 13 which is complementary in shape to projecting ribs 12 on the hangers. The interlock button 8 is slidable within slots 14 in the area bounded by the raised platforms 17. The shape or profile of the button preferably corresponds to the outline of said raised platforms. This is to facilitate location thereof through apertures 15 on the front hanger, locking and unlocking of adjacent files shown by arrows on Figure 5.

The uppermost part 16 of the hanger comprises a trackway 18 for receiving an index carrier(not shown). The said trackway may include stops or detents for positive location of any index carrier in predetermined positions.

The internal faces of the front and rear hangers 5a, 5 are provided with a recessed part 19 in which the upper edge 4 of the file wallet 2 is welded. This welded connection between hangers 5, 5a and document wallet 2 serves as a sole securing or bonding system between these parts. A series of small spaced spot welds may be used as an alternative to the arrangement depicted. The wallet 2 and rear hanger 5 may be constructed from the same i.e. first plastics material. This may comprise polypropylene. The hangers are more rigid than the file wallet.

10. The front hanger 5 is secured by a continuous, elongate welded connection at the recessed part 19 to the file wallet 2. Both hangers comprise one-piece integral mouldings with hook formations 6 and sloping sides 7. It has been found to be considerably advantageous to use a one-piece moulding which includes the suspension

15. means i.e. hooks as integral components. The hangers have a projecting rib 12 and complementary recess 13. The said ribs and recesses provide a nesting facility whilst occupying a minimum space. Thus it is possible as depicted in Figure 4 to bring the hangers from adjacent document files in a suspension system into

20. close contact and employ the interlocking feature if required. The said interlocking feature (less the button) forms an integral part of the hangers and this is more advantageous than separate clips and the like which have previously been used for this purpose.

25. The rib or recess 12, 13 is provided with apertures 15 through which a file-to-file interlocking button 8 may be located when nesting adjacent files. In order to provide a locking function the said

interlock button can be passed through the apertures 15 and simply displaced to one side of said aperture (i.e. by sliding the said button within the slot 14) and thereby to retain adjacent files in close contact at their upper edges, to reduce misfiling papers into gaps between files.

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The welded connections between wallet and hangers may be formed by heat welding apparatus or ultrasound techniques. The recess 19 provides for a flush fit between the file wallet and the adjacent part of the said hangers.

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One form of index carrier may comprise a moulding of resiliently flexible plastics material which may be the same or different from the material of the document wallet and/or the hangers, having a pair of spaced apart depending legs. The said legs can include lowermost projections which may serve to engage any detent within the trackway 18.

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An index card may be located behind a translucent cover on the index carrier for the purpose of file content information.

An alternative arrangement of index carrier is proposed in which the translucent cover comprises a close or tight fit upon the

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carrier, an index strip merely resting upon a ledge in the index carrier, and the translucent cover having an internal surface

designed to bear against said index card ledge and carrier part.

Thus it may be a simple matter to insert and remove index strips, labels and the like from a suitable form of index carrier. It is

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also a simple operation to move an index carrier along the trackway 18 to engage positively any detent, stop or the like.

CLAIMS

1. A document file comprising a resiliently flexible file wallet made of a first plastics material, upper and/or side edges of said wallet being secured by one or more welded connections to supporting hangers made of said first plastics material or of a weld-compatible second plastics material.
5. 2. A document file as claimed in Claim 1 in which the hangers have integrally formed hook formations.
10. 3. A document file as claimed in Claim 1 or 2 in which the hangers comprise one-piece integrally formed mouldings.
4. A lateral document file as claimed in any preceding claim in which the file wallet is welded at its uppermost edges and its side edges to supporting hangers which extend continuously along the lengths thereof.
15. 5. A suspension document file as claimed in any one of Claims 1 to 3 in which the file wallet is welded only at its uppermost edges to supporting hangers.
20. 6. A document file as claimed in any preceding claim in which the or each welded connection is elongate and continuous and formed between the material of the file wallet and the material of the supporting hangers.
7. A document file as claimed in any preceding claim in which the wallet and hangers are constructed from olefin or vinyl polymeric material such as polyethylene, polypropylene or polyvinyl chloride.
- 25.

8. A document file as claimed in Claim 7 in which the wallet is constructed from propylene polymer film and the hanger from moulded propylene polymer containing from 5 to 50% by weight of strengthening filler.
5. 9. A document file as claimed in any preceding claim in which the two supporting hangers are non-identical and include a nesting profile preferably in the form of complementary elongate ribs.
10. 10. A document file as claimed in Claim 9 including a file-to-file interlock comprising buttons slidably located in one support hanger and capable of passing through holes in the other support hanger.
10. 11. A document file as claimed in any preceding claim including a two-part index carrier constructed from a resiliently flexible sliding part and a translucent or transparent cover part between which an index strip can be located.
15. 12. A filing system incorporating a document file as claimed in any preceding claim.

13. A document file as claimed in any one of claims 1 to 11 substantially as herein described.

14. A document file substantially as herein illustrated in any one of Figures 1 to 5 of the accompanying drawings.